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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/707,698	11/07/2000	Roger L. Hipwell JR.	169.12-0467	9566

164 7590 07/07/2003

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MINNEAPOLIS, MN 55415-1002

EXAMINER

OLSEN, ALLAN W

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 07/07/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/707,698

Applicant(s)

HIPWELL ET AL.

Examiner

Allan W. Olsen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4 and 12-15 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,392,144 issued to Filter et al. (hereinafter, Filter).

Filter teaches a MEMS fabrication method in which a handle wafer is mechanically bonded to a product wafer. Filter teaches that an insulating layer (silicon nitride, polyimide, TEOS) can be applied to the bonding surface of the handle wafer after the bonding surface has been patterned (column 8, lines 52-60; column 13, lines 10-11). Filter teaches forming a predetermined number of interconnecting structures and Filter teaches that these structures may be made from metal which would provide a thermal conduction path between the handle and product wafers (column 8, line 60; column 12, lines 34-38; column 13, lines 10-11).

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 6-11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Filter.

The above noted teachings of Filter are herein relied upon. Additionally, it is noted that Filter teaches making a multichip module where individual MEMS devices attached to a supporting handle wafer (column 16, lines 43-48, figure 11). Filter teaches etching completely through the product wafer (column 14, lines 48-51).

Filter does not teach plasma etching the MEMS devices using a through-etching process after the handle wafer and the product wafer are mechanically interconnected. Filter does a method wherein the etching of the MEMS devices releases the devices from the product wafer onto to the first side of the handle wafer. Filter does not teach that the MEMS devices are disc drive microactuators. Filter does not teach that the MEMS devices are disc drive microactuators.

It would have been obvious to one skilled in the art to make the multi-component device of figure 11 by making each individual component on a single product wafer because this would offer great efficiency as all component could be simultaneously fabricated. Then, before removing the components from the product wafer, or separating one component from another, it would be obvious to attach the product wafer to the handle wafer because then, with just a single step, each individual component of the multiple components module could be attached to the handle wafer. It would then be obvious to conduct a through-etching process in order to separate the individual components from one another and effectively transfer each component to the handle wafer because this would provide access to the bonding pads of figure 11 and

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also allow for visible inspection. With respect to the disc drive microactuator limitations, the examiner considers this to be a statement of future intended use and as such is given little patentable weight. Nevertheless, Filter is generically directed to a method of making MEMS. Therefore, it would be obvious to one skilled in the art that Filter's method would be useful in making MEMS devices in general, and therefore, it follows that Filter's method would be useful in making disc drive microactuators.

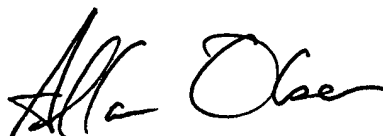
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Olsen whose telephone number is 703-306-9075. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Mills, can be reached on 703-308-1633.

The general fax numbers for TC1700 are 703-872-9310 (non-after finals) and 703-872-9311(after-final).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

Allan Olsen, Ph.D.
July 3, 2003

A handwritten signature in black ink, appearing to read "Allan Olsen", is positioned below the typed name and date.